



OPEN Self-care management in patients with heart failure in Nakhon Si Thammarat Province, Thailand: a descriptive qualitative study

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Heart failure remains a major global health burden, characterized by high mortality, frequent hospital readmissions, and poor quality of life. These outcomes are closely linked to inadequate self-care behaviors, limited patient knowledge, and insufficient ongoing support. This study aimed to describe self-care behaviors, self-awareness of severe symptoms requiring hospitalization, and symptom management strategies among patients with heart failure, and to provide evidence-based recommendations to inform improved care delivery. A descriptive qualitative study was conducted using individual in-depth interviews with 19 adults living with heart failure in community settings in Nakhon Si Thammarat Province, Thailand. Data were analyzed using content analysis to identify recurring patterns and themes related to self-care experiences. Three key themes were identified. (1) Self-care behaviors shaped patients' lifestyles, with family caregiving influencing engagement in daily activities, medication adherence, and integrated self-care practices that supported physical and emotional well-being, knowledge-seeking, and healthcare support. (2) Self-awareness of severe symptoms requiring hospitalization, developed through continuous self-monitoring, was central to living with heart failure. Patients relied on physical sensations to guide symptom management, while engagement in daily activities reflected varying levels of self-care capacity or reliance on healthcare professionals. (3) Early self-management of symptoms supported timely rest, effective swelling control, and adherence to professional advice, contributing to reduced hospital readmission and mortality. Effective heart failure management requires individualized self-care approaches that are responsive to patients' personal and cultural contexts. Enhanced self-awareness of symptoms such as orthopnea and weight gain enables timely self-management actions, including activity pacing, limb elevation, and medication adjustment. Furthermore, digital health tools and home-monitoring devices play an increasingly important role in supporting patient education, symptom tracking, and sustained self-care in heart failure.

Keywords Community health nursing, Patients with heart failure, Qualitative study, Self-care behaviors, Self-awareness, Self-care management

Heart failure (HF) is a complex clinical syndrome resulting from structural or functional impairments that affect ventricular filling or blood ejection¹. Cardiovascular diseases (CVDs) remain the leading cause of death worldwide², with HF being one of the most prevalent and severe conditions, and contribute significantly to high mortality rates and frequent hospitalizations^{3,4}. Moreover, patients with HF are at risk of disease recurrence⁵. Despite medical advancements, HF continues to be a major global health concern, with a lifetime risk of approximately 20% at the age of 40⁶ and persistently high hospital readmission rates⁷. The complexity of HF symptoms often results in poor health outcomes, including hospitalization, reduced quality of life, and increased mortality. These outcomes impose a significant economic burden on patients, their families, and society⁸. HF is a global pandemic affecting at least 64 million people worldwide⁹. In Asia, the prevalence of HF is estimated to range from 1.26% to 6.7%, and the associated healthcare costs continue to rise¹⁰. In Thailand, CVDs are the second leading cause of death per 100,000 people. In the Upper South Region, including Nakhon Si Thammarat Province, CVDs rank fifth¹¹. The number of patients receiving services for HF has increased annually: 6817 in

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2021, 7444 in 2022, and 7709 in 2023¹². HF is a worldwide crisis; the specific rising trends in Thailand and the Upper South Region demand immediate clinical and policy attention.

Self-care is the cornerstone of HF management and is directly linked to quality of life, readmission rates, and survival. Poor self-care is associated with rehospitalization and early mortality, while effective self-care reduces hospitalizations and improves outcomes^{13,14}. Symptoms of HF remain a key factor in readmissions, emphasizing the need for disease control and patient empowerment. Self-care requires patients to apply their knowledge and skills to maintain their health, manage symptoms, and adapt to various situations. However, many patients struggle after discharge due to difficulties with daily activities, emotional stress, and limited understanding of medications and diet¹⁵. Patient compliance is critical for effective self-care and prevention of readmission, highlighting the importance of tailored nursing interventions across care levels.

In the practical theory, Barbara Riegel's Theory¹⁶ of HF self-care, the theory of self-care of chronic illness, has been applied. Self-care is essential in the management of chronic illness; however, the process of engaging in self-care is more complex than previously thought. Guidelines for self-care in patients with HF aim to prevent complications and slow disease progression by emphasizing three key aspects: self-care maintenance, symptom perception, and self-care management. When patients engage in self-care behaviors to maintain their health and effectively manage symptoms, they gain confidence in caring for themselves. Regular self-care practice can prevent complications and slow the progression of HF, leading to an improved quality of life. By promoting patients' self-care potential, individuals are better able to manage their own health and achieve better health outcomes and quality of life.

Although HF can be managed with proper treatment, several factors contribute to worsening symptoms and frequent readmissions. Poor self-care behaviors, including excessive fluid and salt intake, irregular medication adherence, and inadequate healthcare support, play a major role. Delayed consultations and limited treatment adjustments further aggravate symptoms. Studies have shown that over half of the patients with HF are readmitted within 3–6 months after discharge¹⁷. The main cause is inadequate self-care, particularly poor adherence to treatment plans¹⁸. Common mistakes include poor fluid restriction, failure to monitor balance, high salt intake, and inconsistent medication use. Limited disease knowledge and healthcare access further reduce quality of life^{13,19}.

Self-care interventions are vital for improving knowledge and quality of life and reducing HF-related hospitalizations²⁰. However, there is a lack of clarity regarding tailored need-based strategies, which poses challenges for nurses in delivering patient-centered care²¹. Furthermore, policy guidance, particularly for post-discharge community care, is limited. While many studies investigate self-care education, few focus on interventions promoting self-care behaviors in patients with HF. Most studies emphasize hospital-based care, with limited attention paid to community-based strategies. Despite most patients living with their families in communities with diverse social and cultural contexts, these factors influence their self-care behaviors. Therefore, a profound understanding of these behaviors is essential for health providers to tailor care plans that effectively address patients' specific needs within their context.

This study employed a descriptive qualitative research design to explore self-care behaviors, perceived symptoms requiring hospitalization, and strategies to reduce the risk of readmission. Nakhon Si Thammarat Province, located in the upper southern region of Thailand, was chosen because of the region's increasing HF rate. Its diverse demographic landscape, encompassing urban, semi-urban, and rural communities, and its religious diversity (Buddhist and Muslim) provided a suitable environment for a comprehensive collection of patient experiences. The research findings will guide healthcare providers in developing context-specific care plans for patients in Nakhon Si Thammarat Province and facilitate knowledge transfer to similar contexts. The study results make recommendations for stakeholders to develop appropriate support strategies that enable patients with HF to manage their care effectively. In addition, this study can guide family members and community caregivers, especially community nurses and those involved in continuity of care, on how to support long-term self-care. The study offers transferable insights that stakeholders can use to reduce HF readmissions. By understanding the link between how patients recognize symptoms and how they manage their care, organizations can create evidence-based guidelines to improve patient outcomes.

Method

Objectives

1. To describe self-care behaviors, symptom recognition, specific signs necessitating hospitalization, and symptom management among HF patients in the context of Nakhon Si Thammarat province.
2. To provide evidence-based recommendations for stakeholders to develop targeted support strategies that optimize patient self-management efficacy.

Research conceptual framework

The Middle-Range Theory of Self-Care for Chronic Illness served as the theoretical framework guiding data collection and analysis. Consistent with a qualitative descriptive design, the study adopted a pragmatic, 'factist' perspective, viewing participant accounts as truthful representations of their reality.

Research design

This study employed a qualitative descriptive design. Data were collected through individual in-depth interviews to elucidate self-care behaviors, perceptions, and management strategies among patients with HF. Complementing the verbal data, researchers observed non-verbal cues such as facial expressions and body language to capture participants' emotional responses and assess the congruence between their stated beliefs and actual reactions²².

Participants and sampling procedure

A purposive sampling strategy was employed to select key informants, following well-established protocols. This method ensured the intentional selection of participants with relevant knowledge or experience to provide meaningful insights for the study²³.

They must be clinically stable, with vital signs near baseline and without severe symptoms, or have a doctor's approval to return home. This ensured that the participants could safely implement lifestyle changes that are appropriate for studying self-care behaviors and management in patients with HF.

The participants were selected based on the following criteria: (1) male and female patients with HF aged 18 years or older diagnosed with HF; (2) New York Heart Association (NYHA) classes II-IV; (3) classification of HF by LVEF: HF with reduced EF (HFrEF) LVEF ≤ 40%, HF with mildly reduced EF (HFmrEF) LVEF 41%-49%, and HF with preserved EF (HFpEF) LVEF ≥ 50%; (4) stage of HF: stage C according to AHA/ACC guidelines, as stage D involved severe signs and symptoms where the main treatment was medication and procedures; (5) fully conscious individuals able to read and write in Thai and willing to participate in the study, as communication and active participation with the researchers were necessary, and their impact on transferability.

The exclusion criteria were participants who experienced an exacerbation during the study, such as respiratory failure requiring tracheal intubation, undergoing complex heart procedures, or receiving resuscitation, among other severe complications.

Data collection

In-depth interviews provided the researchers with the opportunity to explore the participants' individual perspectives and behaviors in detail. The private one-on-one setting encouraged honest and open responses²⁴ at home. Moreover, these interviews were instrumental in reaching data saturation; that is, sufficient information was gathered to fully understand the research topic²⁵.

Qualitative data were collected using three open-ended questions related to self-care behaviors, symptom perception, and self-care management. The questions were as follows: (1) How do you typically engage in self-care behaviors? (2) What symptoms do you consider severe enough to require a hospital visit? (3) How do you manage your self-care regarding the severity of your symptoms? The procedures for the in-depth interviews are listed in Table 1.

In-depth interviews with data analyses of 19 participants were conducted concurrently until data saturation was reached (no new information emerged), and employing triangulation, the practice of using multiple perspectives to "cross-verify" findings, such as data triangulation, investigator triangulation, and methodological triangulation. Each interview lasted for 30 min and was audio-recorded with consent. A qualitative open-ended questionnaire was used to gather the participants' opinions, experiences, and suggestions.

Data analysis

Content analysis was performed by thoroughly reading the interview transcripts and dividing them into smaller parts that represented the condensed meaning of the entire text. Each part served as a unit of meaning, and these units were labeled to create various codes reflecting the raw data and relationships within the units. A second coding process was conducted to ensure that the codes aligned with the research objectives. The codes were then compared to create broader categories, and themes sharing common perspectives and dimensions were generated from these categories²⁶. Inter-coder reliability was used by the codebook with the same data. The

Interview phases	Aims	Main questions	Probe questions
Greetings	Introduce the interviewer. Build interactions with patients to establish trust.	Introduce myself	My thesis focuses on exploring new knowledge about self-care in patients with HF to disseminate these findings to benefit the public. (Use active listening: nod, paraphrase, and reflect what the patient says.)
Introduction	Get to know the participants. Explain the research objectives. Provide an opportunity for patients to ask questions.	1. Tell me about yourself. 2. Could you please tell me about your history with this illness?	1. Please describe your typical daily routine from the moment you wake up until you go to bed.
Exploring present aspects	Elicit information about self-care behaviors, symptom perceptions, and self-care management in patients with HF in Nakhon Si Thammarat Province.	1. How do you typically engage in self-care behaviors? 2. Identify symptoms that you consider severe enough to require a hospital visit? 3. How do you manage your self-care regarding the severity of your symptoms?	1. Could you please share the self-care behaviors that have helped you live with your condition? 2. Tell about the symptoms that prompted you to seek hospital care most recently? 3. How did you manage your symptoms before your most recent hospital visit?
General follow-up questioning	Ask for additional information.	1. How are the symptoms of your condition currently?	1. Could you share the challenges you face that make it difficult to take care of yourself effectively? 2. Could you share the factors that help you manage your symptoms effectively?
Wrap-up	Summary provided by the interviewee. Obtain feedback from the interviewee. Close the interview and ensure no further questions remain.	No questions were asked. Thanks were given, and acknowledgments were made for the time taken. Express acknowledgments and thanks.	No questions were asked. Thanks were given, and acknowledgments were made for the time taken. Recheck information for accuracy.

Table 1. Semi-structured interview questions for individual in-depth interviews. These questions served as interview guides but were not followed prescriptively. Additional questions were asked as needed, based on the interviewees' responses, to elicit more information, clarify points, or conduct factor checks.

researchers established data analysis guidelines to answer the research questions. The content analysis method was used in the conventional content analysis; an inductive approach by Process, as shown in Fig. 1.

The researchers served as interview facilitators, recording audio and taking field notes. The transcripts were reviewed by the participants for feedback and corrections. Data collection continued until evidence of saturation, such as data redundancy, no new themes emerging or categories, and a clear research question.

Data were systematically organized for accessibility and safety at <https://www.nurseapp.hccrg.org>, which is essential in a qualitative study because of the large volume of data. The researchers organized the data before, during, and after collection, primarily in the field. Field recordings, including verbatim transcriptions, captured verbal and non-verbal elements, laughter, tone, and silence, which preserved natural emotions and atmosphere. The recorded information was then categorized using a structured system to facilitate retrieval and analysis.

Trustworthiness

The trustworthiness of this study derives from the clearly identifiable aspects of credibility, transferability, and dependability inherent in its methodology^{27,28}.

Credibility

External credibility: The researchers had prior knowledge of HF in adults. Two researchers were registered nurses (RNs) and lecturers at Walailak University. The first author holds a bachelor's and master's degree in nursing, the corresponding author holds a Ph.D. in nursing science, and the co-author holds a Ph.D. in tropical medicine. Guidance from an experienced advisor and prior qualitative research training enhanced their understanding and methodological rigor.

Internal credibility: The study was carefully planned using qualitative methods with detailed data collection and analysis. Triangulation involved the use of multiple methods and sources. Summaries were shared with the participants, checking for accuracy, academic advisors reviewed the process, and thorough documentation was maintained, enhancing credibility and ensuring validation of local details.

To ensure external credibility, the researchers provided detailed descriptions of the participants and their social and cultural contexts, selected diverse participants to examine consistent experiences, compared the findings with those of similar studies, and documented data collection and analysis methods.

Transferability

Transferability was enhanced by detailing the data analysis process and participants' characteristics. Comprehensive documentation, including IDs, category and theme names, and definitions, followed established

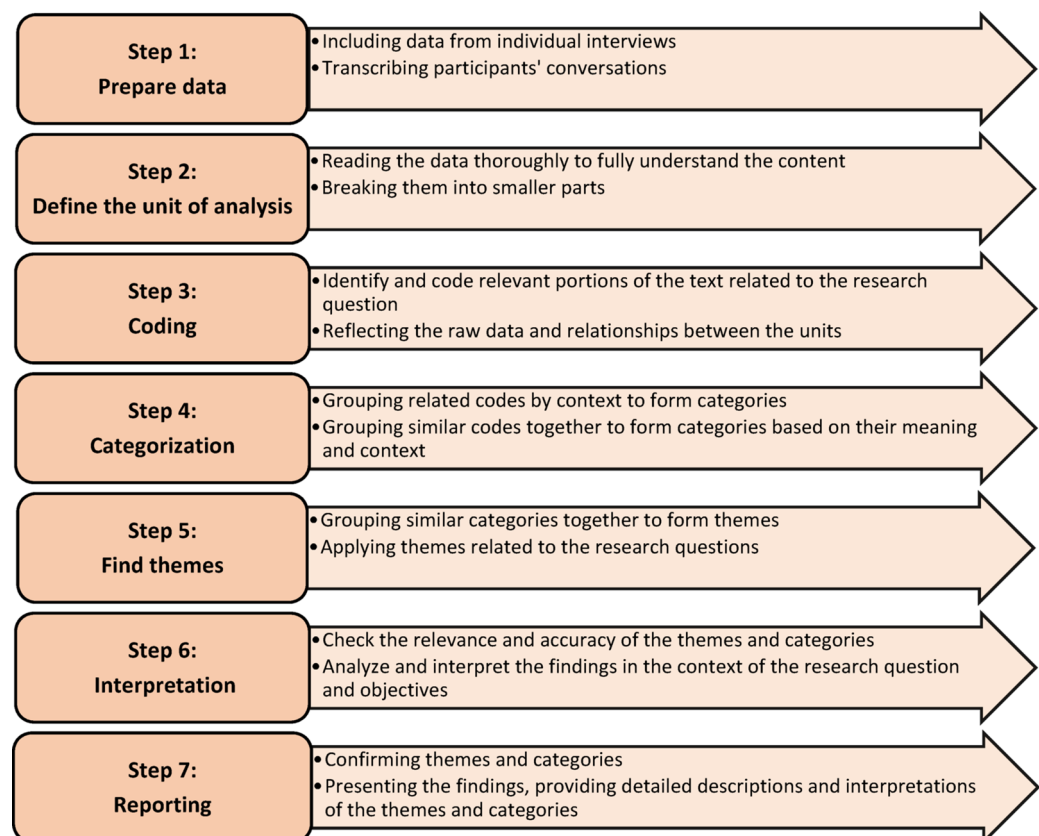


Fig. 1. Flowchart showing the seven steps of data analysis.

guidelines. This allows other researchers to adapt and apply the findings to different contexts, supported by documents prepared by the researchers to validate the analysis.

Dependability

Dependability was ensured through consistent coding using a codebook. Two experienced coders, the author and co-author, each with over ten years’ experience in qualitative research, followed a uniform process. Their formal qualitative training, especially in coding, supported reliable analysis and research outcomes.

Ethical considerations

The work described in this study was conducted in accordance with the Code of Ethics of the World Medical Association (Declaration of Helsinki). The study was approved by the Human Research Ethics Committee of Walailak University. The reference number for the approval is WU-24-041-01, and the approval was issued on February 1, 2024.

The study objectives, methods, and data collection were explained to the participants, and informed consent was obtained. The participants could withdraw at any time without affecting the treatment. Questions were asked gently and were stopped if discomfort arose. The interviews ensured privacy and comfort. The participants received self-care education, and all responses were kept confidential and presented anonymously.

Results

Demographic information

The participants’ demographic information, including code, age (years), gender, stage of HF, and Barthel Activities of Daily Living (ADL), is shown in Table 2. Most participants were elderly, ranging in age from 45 to 87 years, were in stage C of HF, and had a NYHA class II. Their ADL scores ranged from 10 to 20, indicating moderate to high dependence with mild to severe limitations, suggesting consideration for discharge to home. Moreover, all the participants agreed to participate in individual interviews.

Themes and categories are shown in Table 3.

1. Self-care behaviors influence the lifestyle of patients with HF.

Self-care behaviors in patients with HF in Nakhon Si Thammarat positively affected diet, family caregiving, sleep, and exercise. They also enhanced routine activities, medication adherence, and symptom monitoring. Actively seeking health knowledge and receiving support from healthcare providers are key motivational factors that strengthen and sustain effective self-care behaviors.

1.1 Self-care behaviors aimed at preventing HF exacerbation influence eating habits and family caregiving practices.

To reduce symptom exacerbations, patients and their families focused on preparing meals by avoiding salty seasonings, reducing sugar, and controlling fluid intake. Six participants described their own eating and cooking habits as follows:

Code	Age (year)	Gender (M/F)	Stage of HF	New York Heart Association (NYHA) classes	ADL	Hospital readmission interval (month)
001	87	F	C	II	13	12
002	70	F	C	II	15	12
003	60	M	C	II	20	11
004	76	F	C	II	18	10
005	66	M	C	II	20	9
006	78	F	C	II	20	12
007	64	M	C	II	20	10
008	51	M	C	II	20	7
009	79	M	C	II	17	8
010	44	M	C	II	20	11
011	73	M	C	II	20	12
012	53	F	C	II	20	9
013	78	F	C	II	12	7
014	59	M	C	II	20	8
015	70	M	C	II	10	11
016	62	F	C	II	11	9
017	45	F	C	II	20	12
018	78	F	C	II	20	10
019	63	M	C	II	20	9

Table 2. Participants’ demographic data.

Themes	Categories
1. Self-care behaviors influence the lifestyle of patients with HF.	1.1 Self-care behaviors aimed at preventing HF exacerbation influence eating habits and family caregiving practices. 1.2 Self-care behaviors shape patients' engagement in appropriate activities of daily living, thereby enhancing effective self-care performance among patients with HF. 1.3 The ability to take medication significantly impacts effective self-care. 1.4 Integrated self-care practices enhance physical and emotional well-being. 1.5 Seeking knowledge from various sources positively influences self-care behaviors. 1.6 Positive reinforcement from healthcare providers can effectively influence and motivate patients toward healthier self-care behaviors.
2. Self-monitoring plays a vital role in enabling patients to live with HF.	2.1 Physical sensations influence symptom monitoring and help guide self-management strategies. 2.2 Performance of daily activities indicates the level of self-care or dependence on healthcare professionals.
3. Early self-management of symptoms reduces readmission and mortality rates.	3.1 Rest reduces discomfort and temporarily improves breathing. 3.2 Self-management of swollen legs helps reduce hospital readmissions. 3.3 Symptom management by following healthcare professionals' recommendations reduces hospital readmissions.

Table 3. Themes and categories of the self-care model emerged from the in-depth interview transcripts.

"My son prepares bland food for me. He tries to add as little fish sauce and MSG as possible so that I can still enjoy the taste." [002]

"I like sweet food, not salty/spicy, but I only eat it in small quantities." [004]

"My son helps prepare food with less salt and fish sauce. He doesn't put any MSG in my food at all, and he doesn't let me drink more than 1,000 cc of water a day." [009]

"I cook my own food. I don't use any MSG in my food." [012]

"My spouse and daughter prepare separate meals for me without MSG/seasonings." [014, 016]

1.2 Self-care behaviors shape patients' engagement in appropriate activities of daily living, thereby enhancing effective self-care performance among patients with HF.

Walking was identified as an appropriate and recommended form of exercise. Independent self-care activities reflected good personal hygiene and effective condition management. However, some patients required assistance due to limitations in daily functioning. Sixteen participants described their activities of daily living as follows:

"I can bathe and eat independently and only need help with changing diapers and cooking." [001]

"I take care of myself by walking two to three laps a day for about ten minutes, sometimes using a cane, and I can eat independently, although I occasionally need help with bathing and dressing." [002]

"I can carry out my daily routines independently." [003, 004, 007–012]

"I can complete all daily activities, including mowing the lawn, without feeling fatigued." [005]

"I manage my daily activities on my own, including cooking, and I usually walk for about six to seven minutes in the evening, although I often feel tired." [006]

"I can bathe by myself and sometimes dress independently, but my son helps me with diaper changes." [013]

"I handle all of my daily routines independently and do not feel tired." [017–019]

1.3 The ability to take medication significantly impacts effective self-care.

Some patients independently adhered to their medication regimens without missing doses, used pill organizers, and monitored side effects after administration. However, other patients engaged in risky medication behaviors, including adjusting or delaying medication schedules without consulting healthcare providers. Interviews suggest that five participants described their taking medication as follows:

"I take my medication on time every day, and my doctor said my blood test results were good." [001]

"I follow the prescribed doses, and my doctor told me everything was fine, with no dizziness." [002]

"I take all my medications as prescribed, keep track of my symptoms, and use a pill organizer so I don't miss any doses." [006]

"I take my medication every day, but if I miss a morning dose, I sometimes take it later at lunchtime." [008]

"I take my medication regularly, and sometimes I adjust the dose depending on how I'm feeling." [005]

1.4 Integrated self-care practices enhance physical and emotional well-being.

Participants routinely monitored symptoms using home-based devices, such as weighing scales, blood pressure monitors, and blood glucose testers; however, suboptimal consistency in device use was evident among some patients. Adaptive sleep positioning, including the use of multiple pillows, reflected ongoing self-care maintenance to alleviate physical discomfort. Additionally, emotional well-being was sustained through psychological self-care strategies, such as self-adjustment, acceptance, and seeking emotional support. Interviews suggest that nine participants described their enhanced physical and emotional well-being as follows:

"I don't check my weight and blood pressure every day, but I do have a blood pressure monitor at home." [004]

"I weigh myself every day at 59 kilograms, and sometimes I check my blood pressure using a monitor from my daughter-in-law." [006]

"I monitor my weight and blood pressure, and I feel stressed about my health at times; when I get stressed, my heart beats faster, but I try to accept it." [007]

"There is a scale at my workplace, so I check my weight every day." [010]

"I don't weigh myself every day, even though I have a scale at home." [011–012, 015]

"I cannot sleep flat and need to use two pillows, but I usually sleep from 8 p.m. to 8 a.m., waking up several times and being able to fall back asleep without feeling stressed." [013]

"I give alms regularly; I used to feel stressed when my condition got worse, but now I feel more relaxed as my health has improved." [016]

1.5 Seeking knowledge from various sources positively influences self-care behaviors.

Patients sought health information from professionals and online media to support self-care, such as the Internet and YouTube. Interviews suggest that four participants described their knowledge as follows:

"I get most of my knowledge from the doctor, and my wife also looks for information based on her past experiences to help with my care." [007]

"I receive information from healthcare professionals and also search for additional information online." [011]

"My daughter looks for information online and then checks it with the doctor." [016]

"Most of my information comes from the doctor, but I also follow health news and look up information on YouTube." [017]

1.6 Positive reinforcement from healthcare providers can effectively influence and motivate patients toward healthier self-care behaviors.

Personal motivation and encouragement from healthcare providers promote better self-care and consistent adherence to medical advice. Interviews suggest that four participants described their motivation as follows:

"The doctor said all my blood test results were good." [001]

"I take my medication as prescribed, and the doctor said my overall health is good." [002]

"The doctor told me that my condition has improved." [008]

"The doctor said my blood tests were normal and safe, and I followed the doctor's instructions to stay healthy in the long term." [015]

2. Self-monitoring plays a vital role in enabling patients to live with HF.

The results suggest that symptom perception involves several interrelated processes, as outlined below.

2.1 Physical sensations influence symptom monitoring and help guide self-management strategies.

Bodily sensations enable patients to recognize symptom changes early, supporting timely detection and effective HF management, such as shortness of breath, leg swelling, weight gain, orthopnea, and chest pain. Interviews suggest that six participants described their physical sensations as follows:

"Leg swelling occurs after drinking much water, varies daily; daughter fills pitcher; sometimes sits with legs hanging." [001]

"Occasionally feels heart fluttering when sitting." [002]

"Noticed weight gain past 4 months; can now lie flat." [003]

"Sits still without breathlessness; leg swelling last month resolved spontaneously; cannot lie flat." [004]

"Previously constant chest pain and breathlessness; fatigue improved after dialysis." [005]

"Feels short of breath, tired, palpitations, leg swelling; sleeps with two pillows." [007] Attentive observation, or "body listening," helps patients detect deviations from normal health. By monitoring signs, such as shortness of breath, leg swelling, weight gain, chest pain, orthopnea, and pulmonary edema, patients can recognize worsening conditions, seek timely medical attention, and ensure early intervention to prevent complications. Interviews suggest that four participants described their monitoring signs as follows:

"Goes to the hospital for chest tightness, pulmonary edema, severely swollen legs, and extreme shortness of breath." [001]

"Visited emergency room once due to pulmonary edema; could not lie flat." [006]

"Recognizes palpitations, swollen legs, chest pain, or shortness of breath as reasons to seek immediate hospital care." [012]

“Doctor advised seeking immediate attention for seizures, swollen legs, or shortness of breath.” [015]

2.2 Performance of daily activities indicates the level of self-care or dependence on healthcare professionals.

Physical symptoms limit daily activities, increase dependence, and negatively affect independence, quality of life, and mental well-being. Interviews suggest that five participants described their daily activities as follows:

“Sometimes feels short of breath after walking a lot.” [003]

“Feels tired after walking; experiences slight dizziness from daily activities.” [006]

“Feels slightly tired after walking.” [010]

“Gets easily tired during quick or intense activities like aerobics.” [012]

“Feels tired after showering and dressing; experiences chest tightness and difficulty breathing when lying flat.” [016]

Self-monitoring helps patients understand symptoms and distinguish normal changes from potential health problems. Interviews suggest that three participants described their healthcare professionals as follows:

“Doctor advised going to the hospital for shortness of breath, swollen legs, low blood pressure, fainting, or dizziness.” [004]

“Go to the hospital immediately if experiencing chest pain or palpitations.” [010]

“Doctors and nurses instruct to seek immediate hospital care for swollen legs, shortness of breath, or loss of consciousness due to possible pulmonary edema.” [013]

3. Early self-management of symptoms reduces readmission and mortality rates.

3.1 Rest reduces discomfort and temporarily improves breathing.

Self-management of symptoms involves the proactive steps that individuals take to monitor, control, and alleviate their symptoms.

Patients manage shortness of breath by resting, reducing activity, and elevating the head to temporarily improve breathing. Interviews suggest that eight participants described their shortness of breath as follows:

“Feels tired after bathing, dressing, and walking; rests until recovered.” [007]

“When lying flat and tired, raises head; daughter takes to the hospital if needed.” [009]

“Tires easily during fast or intense activities; rests 5–10 minutes.” [012]

“Very tired after walking to the bathroom; sits and elevates head while resting.” [013]

“Feels chest tightness and breathlessness when lying flat; uses extra pillows.” [016]

“Avoids lifting arms above head and heavy work.” [002, 010]

“Gets tired during prolonged or urgent work; rests as needed.” [014]

3.2 Self-management of swollen legs helps reduce hospital readmissions.

Patients manage leg swelling by elevating their feet, massaging, resting while seated, and stopping walking. Interviews suggest that three participants described their swollen legs as follows:

“On days with less leg swelling, rests ~10 minutes, massages legs, and takes medication; swelling improves gradually.” [001]

“If legs are very swollen, stop walking and take prescribed diuretics; swelling decreases.” [004]

“Legs are swollen with pitting; elevated feet; the doctor advised a method to check legs.” [018]

3.3 Symptom management by following healthcare professionals’ recommendations reduces hospital readmissions.

Following healthcare professionals’ advice, patients manage symptoms through medication adherence, activity modification, and appropriate lifestyle changes.

Adjusting diuretics, monitoring symptoms, and seeking care when worsening controls pulmonary edema and protects health. Interviews suggest that eight participants described their shortness of breath/swollen legs/orthopnea as follows:

“When legs are severely swollen, the doctor prescribes additional diuretics.” [001]

“If legs swell, stops walking and takes diuretics as prescribed; swelling decreases.” [004]

“Diuretics must be taken before meals to prevent pulmonary edema; avoid high-water foods; reduce shortness of breath.” [006]

“Doctor advises increasing diuretic dosage if legs are swollen; may take an extra pill if urine output is low.” [009]

“For chest pain, takes sublingual medication first; goes to the hospital if symptoms persist.” [003]

"Takes sublingual medication for chest pain; hospital visit only if symptoms continue." [005]

"Doctor recommends sublingual medication for chest tightness; hospital visit if no improvement." [008]

"Chest tightness from shock; takes sublingual medication; feels better in 30 minutes or goes to the hospital." [016]

Discussion and recommendations

The present findings demonstrate that among 19 patients with HF, the longest duration of remaining at home without hospitalization extended to approximately one year before relapse, exceeding that reported in previous studies¹⁷. This prolonged community-based stability was closely associated with sustained engagement in self-care behaviors, including adherence to fluid and sodium restrictions, appropriate medication management, regular weight monitoring, early recognition of symptom deterioration, and timely self-initiated responses. Although promoting self-care remains a central objective of HF management, it continues to pose substantial challenges globally. Importantly, these findings provide both confirmatory and novel evidence on the role of self-care in prolonging community stability, informing stakeholders, and supporting the development of community-focused care strategies and practice guidelines for patients with HF.

Healthcare professional-guided self-care enables patients with HF to remain in the community for longer periods without hospitalization due to symptoms of exacerbation. The present findings provide new evidence that family support, particularly informed caregiving and appropriate meal preparation, plays an important role in reducing symptom worsening. Nevertheless, person-related factors, including older age, low income, limited education, depressive symptoms, and multiple comorbidities, remain significant barriers to effective self-care^{29–32}. Consistent with previous studies, strong social support is associated with better adherence and improved outcomes, whereas insufficient support exacerbates self-care challenges²⁷. Despite the recognized importance of self-care, many patients continue to experience inadequate self-care, particularly older adults with limited knowledge of disease, depression, low social support, insomnia, or a recent diagnosis^{33,34}.

Findings from this qualitative study indicate that HF self-care education often lacks sufficient practical detail, particularly regarding sodium and fluid restrictions, highlighting the need for simple, locally adapted materials. Participants described limiting salt intake to ≤ 5 g/day and restricting fluid intake only when clinically indicated³⁵. Sleep-related self-care behaviors also emerged as important, including the use of the semi-Fowler's position and the use of multiple pillows, avoidance of the supine position, to relieve orthopnea and improve sleep comfort³⁶. Walking was identified as an appropriate and recommended form of physical activity, perceived as feasible and beneficial when performed regularly at a moderate intensity³⁷. In line with established recommendations, both moderate continuous training and high-intensity interval training are safe for patients with NYHA classes I–II, whereas supervised cardiac rehabilitation with gradual progression is beneficial for class III, and very low-intensity, closely monitored activity is required for class IV^{38–40}. Medication-related self-care included the correct medication used, supported by pill box utilization and access to health information from healthcare professionals and online media, such as the Internet and YouTube. Participants also indicated that motivation and encouragement from healthcare providers helped address limited knowledge and low motivation, promoting better self-care and more consistent adherence to medical advice⁴¹.

These recommendations highlight the importance of empowering families with the capacity to share health-related knowledge while providing targeted support to those requiring additional assistance. Family involvement emerged as a key contributor to improved medication adherence, dietary practices, and physical and emotional well-being, and was associated with reduced healthcare utilization^{42,43}. In this context, healthcare professionals play a central role in equipping patients and families with the necessary knowledge and skills to support sustainable self-care and enhance the quality of life among patients with HF.

The present findings highlight self-monitoring as a critical component of living with heart failure, demonstrating that the systematic tracking of abnormal symptoms and physical sensations using home-based devices, such as weighing scales, blood pressure monitors, and blood glucose testers, supports enhanced self-care performance and informs more effective self-management strategies. These findings emphasize the importance of prompt care-seeking in response to warning signs, including sudden weight gain exceeding 2 kg within 1–2 days, dyspnea, chest pain, palpitations, dizziness, or edema unresponsive to diuretic therapy^{44–46}. Evidence from other settings suggests that home-monitoring devices and mobile health applications can support symptom tracking, enhance early detection of clinical deterioration, and reduce hospitalization rates^{45,46}. However, limited access to health information, particularly among older adults, continues to delay symptom recognition and timely treatment, highlighting an important gap in effective self-care support.

The recommendations underscore the importance of empowering family members and community healthcare workers to support patients with heart failure. Enhanced health literacy and improved access to resources facilitate symptom recognition, self-monitoring, and improved health outcomes. Educational interventions should be tailored to the contexts of patients and caregivers, including educational background, socioeconomic status, and cultural considerations. Multiple delivery modalities, such as face-to-face counseling, digital platforms, and telephone-based support, can strengthen knowledge, self-care behaviors, and quality of life. Trust in online health information and support from others further promotes active information-seeking^{11–13}. In addition, community healthcare workers contribute to improved chronic disease outcomes and help address social determinants of health⁴⁷. The integration of mobile devices and digital health systems supports self-care, adherence, and guideline-based care delivery, enables remote monitoring, and promotes independent living at home while maintaining access to care^{48–50}.

The present findings indicate that early self-management of symptoms plays a critical role in reducing hospital readmission and mortality among patients with HF. Rest during periods of symptom exacerbation was associated with improved breathing and comfort, while effective management of leg swelling, weight gain,

orthopnea, and chest pain, together with adherence to healthcare professionals' recommendations, further contributed to lowering the risk of rehospitalization.

Face-to-face education for patients and caregivers focused on symptom recognition and management, combined with empowerment of local health volunteers and the use of motivational interviewing, strengthens self-care behaviors, treatment adherence, and quality of life. In parallel, digital health interventions and telehealth services support self-monitoring, enable timely clinical responses, and facilitate long-term chronic disease management, thereby narrowing gaps between patients and healthcare systems^{11,14,51–53}.

Self-care decision-making is context-specific and shaped by prior experiences, knowledge, skills, and personal values. Participants described managing shortness of breath by resting, reducing physical activity, and elevating the head to temporarily improve breathing. Leg swelling was managed through foot elevation, massage, seated rest, and cessation of walking. In accordance with healthcare professionals' advice, symptom management involved medication adherence, activity modification, and appropriate lifestyle adjustments. Actions such as adjusting diuretic use, monitoring symptoms, and seeking timely care during deterioration were perceived as effective in controlling pulmonary congestion and protecting health. Importantly, these findings highlight that strengthening self-care requires not only knowledge enhancement but also the development of culturally relevant skills and innovative strategies to address negative attitudes or clarify personal values, thereby enabling informed engagement in self-care behaviors.

Limitations and further research

This study was conducted exclusively in Nakhon Si Thammarat Province, which limits the generalizability of the findings to other regions. The results may be applicable only in similar contexts. Studies involving healthcare professionals and patients with heart failure should be conducted in broader contexts to develop consistent practice guidelines applicable across countries.

Conclusion

This study provides recommendations for effective self-care among patients with HF, emphasizing a comprehensive approach that integrates lifestyle modification with proactive symptom management. Effective self-care involves continuous symptom monitoring through “body listening” to recognize early warning signs, such as dyspnea and edema, using home-based devices enabling timely intervention. Dietary modification, particularly sodium restriction, remains a core component of HF management, while adherence to a healthy diet contributes to overall physical and mental well-being. Importantly, healthcare professionals face the ongoing challenge of identifying patients' experiential knowledge, evaluating the accuracy of their understanding, and supporting the development of essential self-care skills through context-sensitive, face-to-face interactions. Regular observation of self-care practices, including home visits and symptom monitoring, is essential to strengthening effective self-management and sustaining long-term stability in patients with HF.

Data availability

The interview data are not publicly available due to ethical and privacy restrictions. They contain sensitive information, but the datasets can be requested from the first or corresponding author with proper justification.

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Author contributions

S.O., U.J., and C.P.: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Resources, Software, Supervision, Validation, Writing — Original Draft, Writing — Reviewing and Editing, Final Approval for Submission. S.O. and U.J.: Project Administration. S.O.: Funding Acquisition. U.J.: Coordination with work, sending the original, and post-publication management.

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Declarations

Competing interests

The authors declare no competing interests.

Ethics approval and consent to participate

This study adhered to the World Medical Association's ethical standards (Declaration of Helsinki) and received approval from Walailak University's Ethics Committee (WU-24-041-01). Participants were fully informed about the objectives, methods, and data collection, provided informed consent, and were free to withdraw without consequences.

Consent for publication

Interview quotes were included without identifying participants, and coding was used in the report to ensure confidentiality and protect privacy.

Additional information

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